

REMARKS

Claims 1-15 are all of the claims currently pending in this application. New claims 14 and 15 are added via this Amendment.

Claim Rejections - 35 U.S.C. §103:

Claims 1-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sullivan (U.S. Patents 6,204,331 and 6,162,134) in view of Ueshima et al. (U.S. Patent 5,502,095) and Bulpett et al. (U.S. Patent 6,291,592). Applicants respectfully traverse this rejection in view of the following remarks.

As a preliminary matter, Applicants note that the Examiner cites "Bulpett et al.," but does not include this reference in the grounds of the rejection. Further, Applicants respectfully point out that the Examiner has not addressed claims 11-13 in the initial statement of rejection, but has addressed these claims in the grounds of the rejection. Thus, Applicants assume that claims 11-13 are rejected in view of the same references as claim 1-10.

The present invention provides a golf ball formed of a material that improves flight performance and durability against consecutive strikes, and offers a very soft feel when hit. A feature of the present invention is to add at least one of a silicone rubber powder, a silicone resin powder and a composite powder thereof to the base resin or base rubber of a portion or layer of the golf ball. It is noted that the additional material of the present invention is not a silicone rubber or a silicone resin, but a silicone rubber powder or a silicone resin powder.

The use of the material in a powder form corresponds to the inventive effects, as seen from the comparison between the Examples and Comparative Examples in the present specification. In particular, the intermediate layer of Comparative Example 7 is prepared from a millable type silicone rubber by compounding 100 parts of TSE 2287U with 0.5 parts of TC-8, which exhibits poor durability against consecutive strikes, as seen from Table 3. In contrast, Example 5 uses Hytrel 3046 and X-52-830 (silicone resin powder) as a material for the intermediate layer, which provides superior durability against consecutive strikes, as seen from Table 2. Also, the present invention introduces the use of a blend silicone rubber, which is described hereinafter.

As noted in the second full paragraph of page 2 of the specification (Background of Invention):

“Another attempt was made to blend millable type silicone rubber in a core-forming rubber or cover-forming resin, followed by dynamic crosslinking (JP-A 8-243191 and JP-A 9-220296). These blends have drawbacks including extremely reduced flow, difficulty of injection molding, and difficulty of uniform dispersion, which lead to low durability against strikes. It is very difficult to tailor these blends to a practically acceptable level.”

The present invention overcomes drawbacks of the prior art and provides a blend composition comprising a base resin or a base rubber and at least one of a silicone rubber powder, a silicone resin powder and a composite powder. This improves flight performance and durability against consecutive strikes and offers a very soft feel when hit. In particular, the present invention uses the silicone material in the form of a powder, which largely influences the beneficial and inventive effects of the invention.

Turning to Sullivan, the Examiner acknowledges that Sullivan does not teach or suggest a golf ball composition that is blended with at least one of a silicone rubber powder, silicone resin powder and composite powder.

As described above, the silicone material in a powder form together with the base material significantly effect the beneficial aspects of the invention. Sullivan does not teach or suggest the use of the silicone material in powder form. In addition, the description of Sullivan that "[T]hese polymers can be combined with fillers, additives and solvents to result in products generally termed as silicones" (see col. 10, lines 6-8 of Sullivan '134) would not have suggested that durability against consecutive strikes is improved by using the silicone material as a form of powder. Instead, Sullivan introduces merely the use of silicone materials which are part of a wide group selected from silicone polymers, silicone fluids, silicone elastomers, silicone resins and the like, and which are not expected to remarkably improve durability against strikes. Therefore, Sullivan does not teach or suggest the claimed features of the golf ball and the effects thereof.

Turning to Ueshima, this reference discloses a thermoplastic elastomer composition which is (A) 50-98% by weight of a thermoplastic polyester elastomer, (B) 50-2% by weight of a rubber and (C) a polyorganosiloxane in a proportion of 0.01-10 parts by weight per 100 parts of the total of the compositions of (A) and (B). Ueshima also discloses in column 6, lines 61-65, that the polyorganosiloxane (C) is more preferably a master batch in which the polyorgano-siloxane is previously blended with a resin or rubber, or a blend with a filler such as a silicone rubber powder.

However, the composition of Ueshima is formed mainly of a thermoplastic polyester elastomer composition and a (B) component of a rubber that is used as an essential element. This is different from the composition of the present invention, which is a blended composition of a base material and at least one of a silicone rubber powder, a silicone resin powder and composite powder.

Moreover, Ueshima does not describe a composition used in a golf ball. It is noted that golf ball properties, such as flight performance, durability against consecutive strikes and a soft feel when hit, are unique characteristics of the golf ball itself. These beneficial effects are not expected merely from a composition itself. Ueshima does not teach or suggest the constitution of a golf ball. Instead, Ueshima's thermoplastic elastomer composition enables one to improve the flexibility and composition set of the thermoplastic polyester elastomer with a focus on mechanical properties, heat resistance and oil resistance, without impairing the abrasion resistance of the thermoplastic polyester elastomer. These properties are not linked to the golf ball properties described above, nor would one skilled in the art have linked these properties to those desired in a golf ball.

The effects of both flight performance and durability against consecutive strikes are evaluated when making a golf ball. Even one skilled in the art would not have anticipated that a golf ball is improved when Ueshima's disclosed composition is applied to a material for a golf ball.

Accordingly, one skilled in the art would not have been motivated to include the material of Ueshima into the golf ball of Sullivan based solely on the disclosure of improved mechanical

properties, heat resistance and oil resistance, without a teaching that such mechanical properties and heat/oil resistance would beneficially affect a golf ball. Just because a particular material can be molded or has a particular property, without more, would not have led one to use such a material in a specific application, such as a golf ball.

Consequently, claims 1-13 are patentable over Sullivan (U.S. Patents 6,204,331 and 6,162,134) in view of Ueshima et al. and Bulpett et al., and the rejection of claims 1-10 under 35 U.S.C. §103(a) should be withdrawn.

New Claims:

Applicants add new claims 14 and 15 to obtain more varied protection for the invention, and submit that they are patentable over the applied reference for reasons similar to those given above in regard to claims 1-10.

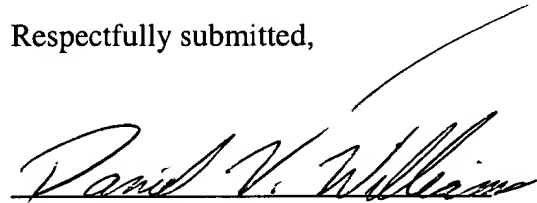
In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local telephone number listed below.

AMENDMENT UNDER 37 C.F.R. §1.111
U.S. Application No. 09/732,786

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Respectfully submitted,



Daniel V. Williams
Registration No. 45,221

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

9. (Amended) The golf ball of claim 1 wherein the golf ball-forming composition is at least one member selected from the group consisting essentially of a one-piece golf ball material, a core material and a cover material for a two-piece golf ball, a core material, an intermediate layer material and a cover material for a multi-piece golf ball having at least three pieces.

10. (Amended) The golf ball of claim 1 wherein the golf ball-forming composition is based on at least one member selected from the group consisting essentially of an ethylene ionomer resin, [polyester elastomer,] polyurethane elastomer, polyolefin elastomer, polyamide elastomer, polyolefin resin, and styrene block copolymer.

New claims 14 and 15 are added.